

LAND USE PLANNING BOUNDARY

DATA STANDARD

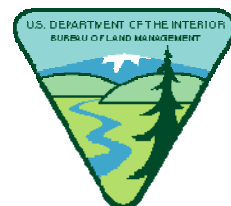


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Introduction

The actual boundary of the Land Use Plan (LUP) is an essential part of BLM's planning process. As defined by Code of Federal Regulations 43 CFR 1601.0-5, Resource Management Plans (RMP's) establish *land areas* for limited, restricted or exclusive use. In addition, RMP's are used in planning decisions that establish allowable resource uses, resource goals and objectives to be attained and program restraints. *If the boundaries for these land areas are inaccurate, then decisions pertaining to these criteria may be subject to dispute.* In order to alleviate possible disputes based on inaccurate boundaries, it is necessary to implement Land Use Plan (LUP) boundaries standards. The LUP standards effort will be used in verifying or providing new information to ensure that each LUP accurately portrays the correct boundary, is named correctly and identifies the correct plan type (i.e., RMP or MFP).

The 1610 Land Use Planning Handbook provides documentation authorizing State Directors to establish the extent or scope of a planning area (43 CFR 1610.1(b)). Thus, resource management plans are prepared and maintained on a resource area basis, unless the State Director authorizes a more appropriate area. Planning areas and decisions vary in scale from National level to site specific. Although planning decisions are made at multiple scales, they are traditionally done on a Resource Management Plan (RMP).

This proposed standard is for a national data layer of Land Use Planning Boundaries. This set of boundaries is to be accessible from a central location for all BLM spatial data users. Individual states and field offices may download copies of the data for use on websites but the central data set will be the official dataset.

Data Standard Report

1. Introduction –

- a. **Description of Standard** – BLM Land Use planning boundaries that have a signed ROD.

A BLM land use plan boundary is defined as: the geographic extent of a Resource Management Plan (RMP) or Management Framework Plan (MFP).

Land Use Plan: a set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed.

- b. **Affected Groups** - All BLM employees, particularly planners

- c. **Sponsor** - WO-210, Planning Group

2. Data Category - Link to Bureau Architecture – BEA Data subject area - PLANS

3. Data Steward Identification (including lead agency if appropriate) – National Data Steward - Leonard Gore Jr, WO-210.

4. Data Set Characteristics –

- a. **Overall Security** – Public. Privileges: Read – public, Create – national data steward, Update – national/state data steward, Delete – national data steward.

b. Data Collection and Maintenance Protocols

- i. **Accuracy requirements** – Best available data for spatial- documented with FGDC compliant metadata. Meet National mapping standards, a scale 24K, 15 minute quad, 100K, in that order.
- ii. **Collection and input protocols** – Input by authorized persons only, using ArcGIS software. Document the source in the metadata.
- iii. **Update Procedures** – When Land Use Planning Boundaries are updated to meet planning needs- updates or revisions, the data should be updated.

- c. **Data Quality** Adopt and adhere to the upcoming data quality guidelines from the Data Management Plan.

- i. **Transaction level data quality** – This data is considered non-transactional, due to its static nature.

ii. Monitoring level data quality – The data will be reviewed at the time of each plan revision or amendment.

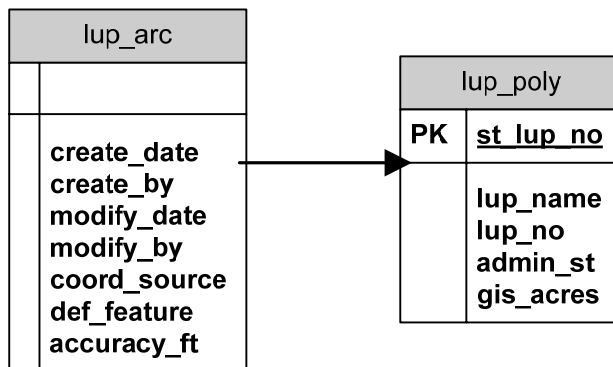
d. Relationship to Other Standards – Currently there are no direct relationships to any applications. The data standards are related to the standards currently under development for the Grazing Pastures and Allotments and the National Landscape Conservation System (NLCS) Boundaries. These boundaries are all artificial boundaries used as administrative boundaries by the BLM for management purposes.

5. Data Model Characteristics –

This document describes the logical model for the Land Use Planning Boundaries geospatial dataset. The Land Use Planning Boundary information will exist within the Land Use Planning Boundary feature dataset.

The proposed data model for the National geospatial dataset of Land Use Planning Boundaries is described below. The model is actually a simple model because the data is to be stored as arcs and polygons reflecting the technology of the ESRI Geodatabase. The attribute data that it will need is minimal as the data are relatively simple polygons. The item listed as the Primary Key in the ‘lup_poly’ table will serve as the unique national identifier that will allow connection to other planning data.

There are two tables (features) shown in this group. The first represents the arc features that will make up the polygons. These arcs will have the feature level metadata attributes shown assigned to them. The second table shows the polygon features that will actually represent the land use planning area boundaries.



A. Land Use Planning Boundary Arcs (lup_arc)

The arc features used to define the polygon features are described below. These arc attributes serve as feature level metadata information. Some of these items will be system generated and will not require any input effort by the users. The others have Domain values with appropriate definitions. The last three attributes fully describe the data collection method along with a description of the expected spatial accuracy. The last three attributes have intentionally been separated out to remove having any 'complex' or 'smart' attributes that carry more than a single piece of information.

ATTRIBUTE NAME	GIS NAME	DATA DEFINITION	REQUIREMENT
CREATED DATE	create_date	Datetime	Feature level metadata. Required. Generated.
CREATED BY NAME	create_by	Varchar(30)	Feature level metadata. Required. Generated.
MODIFIED DATE	modify_date	Datetime	Feature level metadata. Required. Generated.
MODIFIED BY NAME	modify_by	Varchar(30)	Feature level metadata. Required. Generated.
COORDINATE SOURCE CODE	Coord_source	Varchar(5)	Feature level metadata. Required.
DEFINING FEATURE CODE	def_feature	Varchar(15)	Feature level metadata. Required.
ACCURACY MEASUREMENT IN FEET	accuracy_ft	Small Integer(4)	Feature level metadata. Required

1. Created Date

This is a system generated attribute. As a new feature is added to the system its creation date will be collected and maintained. The date will be in FGDC standard format of YYYYMMDD.

2. Created By

This is a system generated attribute. As a new feature is added to the system the userid of the person creating the feature will be collected and maintained. The userid will be the persons BLM login id.

3. Modified Date

This is a system generated attribute. As a feature is edited or modified while in the system its modification date will be collected and maintained. The date will be in FGDC standard format of YYYYMMDD.

4. Modified By

This is a system generated attribute. As a feature is edited or modified while in the system userid of the person modifying the data will be collected and maintained. The userid will be the persons BLM login id.

5. Coordinate Source Code

The Coordinate Source Code represents a compilation of state adopted source codes. This table contains those codes that would most likely be used in the determination of source codes for the Pastures dataset. This list may seem incomplete to many as the previous lists were often a combination of information that attempted to define both source and some inferred measure of accuracy. For example there were formerly multiple 'GPS' and DLG sources with their expected spatial accuracy. Those accuracies have been moved to the 'Accuracy Measurement table.

Attribute Domain Assignment: dom_lup_coord_source

Default value: UNK

Allowable Codes:

Coord_source	Definition
MAP	Manuscripted lines. Includes hand drawing onto paper or mylar map base and capturing with a digitizing tablet and on-screen digitizing using DRG
IMG	DOQ or other imagery backdrops at any scale
GPS	Lines obtained from a Global Positioning System device not using survey methods.
DLG	Lines duplicated or buffered from (1:24K or 1:100K scale) USGS Digital Line Graph derived data including GIS themes such as BLM Streams or transportation.
CFF	Lines duplicated or buffered from Cartographic Feature Files (USFS).
GCD	Lines snapped to Geographic Coordinate Database points.
DEM	Digital Elevation Model (30m or better accuracy) used for creation of contours.
NHD	USGS National Hydrologic Dataset (NHD) 1:24K or 1:100K
SRV	Survey methods were used to define the line feature. This normally requires using COGO or Survey Manager to input the data.
UNK	Unknown source (default value)

6. Defining Feature Description

The following table defines the feature types from which the arcs are derived to create the land use polygon boundaries. This information describes the physical or mapping feature that makes up the land use planning boundary.

Attribute Domain Assignment: dom_lup_def_feature

Default value: UNK

Allowable Codes:

def_feature	Definition
RIM	Natural topographic barrier to the movement of livestock
FENCE	Constructed fence
LAKE	The shoreline of any manmade or natural standing water
ROUTE	Road centerlines (Using the name of the FAMS Feature Class)
STREAM_RBANK	Downstream right bank of stream, manmade or natural moving water (indicates that the stream is within the downstream left pasture)
STREAM_LBANK	Downstream left bank of stream, manmade or natural moving water (indicates that the stream is within the downstream right pasture)
STREAM_CENTER	Centerline of stream, manmade or natural moving water
PARCEL	Legal line such as ownership or section line
PT-TO-PT	Boundary is not a legal or geographic feature
ROUTE_OFFSET	Boundary is offset from a route
UNK	Defining feature unknown

7. Accuracy Measurement

The Accuracy Measurement defines how close, in feet, the actual ground location is to the spatial depiction in GIS. This value would typically be determined by the map accuracy value if a USGS map were used to define the boundary, or by the expected spatial accuracy achieved through the use of GPS. The value may also be the result of a measurement of that accuracy as is noted in the *The National Standard for Spatial Data Accuracy (NSSDA)*¹ which is a “data usability” standard issued by the Federal Geographic Data Committee (FGDC).

A value of -1 indicates that the accuracy is unknown; or that no reliable estimate can be made. An example of a feature that has an accuracy of +/- 40 feet would have an entry of ‘40’.

1 Federal Geographic Data Committee. 1998. Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998

Attribute Domain Assignment: none

Default value: ‘-1’

Small Integer, Required field

B. Land Use Planning Boundary Polygons

The land use planning polygon features are defined below. These land use planning boundary attributes may be duplicated in other data sets but are considered minimum information for unique feature identification and cartographic purposes. Domain values are used when appropriate.

There will be a minimum of 5 attributes associated with the polygon features

ATTRIBUTE NAME	GIS NAME	DATA DEFINITION	REQUIREMENT
LAND USE PLANNING BOUNDARY NAME	lup_name	50 characters	Required
LAND USE PLANNING BOUNDARY NUMBER	lup_no	3 characters	Required
LAND USE PLANNING BOUNDARY STATE CODE	admin_st	2 characters	Required
ADMINISTRATIVE STATE LAND USE PLANNING BOUNDARY NUMBER	st_lup_no	5 characters	Required
GIS ACRES	gis_acres	16.6 numeric	Required

1. Land Use Planning Boundary Name

The word by which the plan is known and set apart from other plans. Example, Kemmerer RMP, is a type of acceptable name designation. This value may or may not be unique at the national level. This is a mandatory attribute.

2. Land Use Planning Boundary Number

A three digit numeric identifier that is an arbitrary serial identifier, these three digits are an artificial, sequential, user-assigned number which distinguishes a unique occurrence of a BLM Land Use Plan within each administrative state. These numbers should run sequentially in the following manner – 001, 002, 003, ..., 010, etc.. This is a mandatory attribute.

3. Land Use Planning Boundary State Code

A two character code which indicates the administrative state responsible for the land use plan. The two digit code are state character codes from FIPS 5-2, CODES FOR THE IDENTIFICATION OF THE STATES, THE DISTRICT OF COLUMBIA AND THE OUTLYING AREAS OF THE UNITED STATES, AND ASSOCIATED AREAS (<http://www.itl.nist.gov/fipspubs/fip5-2.htm>). These are the same two letter postal codes that

most users are already familiar with and thus makes it easier for them to enter the correct information.

4. Administrative State Land Use Planning Boundary Number

This attribute is a concatenation of the Administrative State Code and the Land Use Planning Boundary Number. This field is present for the sole purpose of providing a unique national code.

5. GIS Acres

This is a calculated value of area in units of acres based on the area field created by default within the ESRI Polygon data structure. For the purposes of a 'national data layer', the data are to be stored in geographic coordinates which do not correspond to ground values. This requires that there be a standard method for calculating this attribute.

The method used for this data is as follows. The data are projected into a standard projection such as the ESRI default Albers projection for the continental United States. "US Albers NAD 1983" Once the data are projected, then a calculation of "SHAPE_Area (square meters) * 0.0002471044 = acres" is applied to the existing 'area' field that is default area created by the ESRI software resulting in the field (Attribute) 'SHAPE_Area'. Please note that the figure used in this calculation is the factor for converting the US Survey Foot value for the length of a meter as opposed to the International Standard for converting meters and feet.

A tool will be developed to ensure there is a consistent transformation of geographic coordinates to projected coordinates and an acreage calculation. A standard conversion constant will be used to ensure consistent acreage computations. The tool and all supporting information are contained in Appendix A of this document.

6. Other Material -

National Mapping Standard on-line link
BLM Planning Handbook

7. Procedures

1. Official establishment of the Land Use Planning Boundary Standard will be accomplished through Instruction Memorandums (I.M.s). The first I.M. will initiate the naming of State Data Stewards for Land Use Planning Boundaries. A subsequent I.M. will include review and comment of the plan for establishing the Land Use Planning Boundary Standard, and the I.M. for implementing the Standard.
2. Within sixty days after the official establishment of the Land Use Planning Boundary Standard, and the designation of State data stewards, the National Data Steward will conduct a briefing (such as a meeting, conference call, or teleconference) for all State Data Stewards for Land Use Planning Boundaries. The briefing will discuss the Standard, the I.M.s, what happens next, and questions and issues for proceeding with the use and maintenance of Land Use Planning Boundary data.
3. Implementation of the Land Use Planning Boundary Standard will include a training or educational strategy, coordinated through the National Training Center. This strategy will include: methods by which State Data Stewards and Field Office Data Stewards will learn about their roles and responsibilities as stewards of land use planning boundary data; creation/adoption of State level and Field Office level data standards for Land Use Planning Boundary Data; creation and maintenance of Land Use Planning Boundary data; and references to specific Instruction Memorandums and processes from the BLM Data Management Plan for working with data standards and managing data as an asset.
4. Implementation of the Land Use Planning Boundary Data Standard will be coordinated with the technical specifications and processes of the BLM's e-GIS, e-Gov, Enterprise Architecture, and Data Management Plan projects.
5. The Land Use Planning Boundary Data Standard will adhere to the FGDC Metadata Standard, and will be documented in the BLM Metadata Repository.